

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

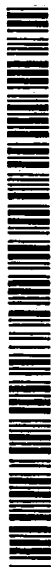


(43) International Publication Date
29 March 2001 (29.03.2001)

PCT

(10) International Publication Number
WO 01/21154 A3

- (51) International Patent Classification⁷: **A61K 9/14, 9/107**
- (21) International Application Number: **PCT/US00/25880**
- (22) International Filing Date:
21 September 2000 (21.09.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/154,964 21 September 1999 (21.09.1999) US
- (71) Applicant: **RTP PHARMA INC.** [US/US]; 4364 South Alston Avenue, Durham, NC 27713-2280 (US).
- (72) Inventors: **PACE, Gary, W.**; 6913 Hunters Way, Raleigh, NC 27615 (US). **MISHRA, Awadhesh, K.**; Apartment 201, 670 de Gaspé, Nuns Island, Verdun, Quebec H3E 1HB (CA). **SNOW, Robert, A.**; 118 Cratin Lane, West Chester, PA 19380 (US).
- (74) Agent: **CRAWFORD, Arthur, R.**; Nixon & Vanderhye P.C., Suite 800, 1100 North Glebe Road, Arlington, VA 22201-4714 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- (88) Date of publication of the international search report:
25 October 2001
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



WO 01/21154 A3

(54) Title: SURFACE MODIFIED PARTICULATE COMPOSITIONS OF BIOLOGICALLY ACTIVE SUBSTANCES

(57) Abstract: This invention disclosure relates to compositions for the delivery of stable surface modified sub-micron and micron sized particles of water-insoluble biologically active substances from a non-aqueous medium that self-disperses on exposure to an aqueous environment.

INTERNATIONAL SEARCH REPORT

National Application No

PCT/US 00/25880

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K9/14 A61K9/107

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 29300 A (MISHRA AWADHESH K ;PARIKH INDU (CA); MOUSSA ISKANDAR (CA); RTP PHA) 17 June 1999 (1999-06-17) the whole document	2,3,5, 8-14
X	WO 99 29316 A (MISHRA AWADHESH K ;MOUSSA ISKANDAR (CA); CLARKE NUALA M (IE); CYCL) 17 June 1999 (1999-06-17) the whole document	2,3,5, 8-14
X	US 5 827 822 A (FLOC H ROBERT ET AL) 27 October 1998 (1998-10-27) the whole document	2,8-14
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

16 March 2001

Date of mailing of the international search report

26/03/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Marttin, E

INTERNATIONAL SEARCH REPORT

National Application No
PCT/US 00/25880

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 091 187 A (HAYNES DUNCAN H) 25 February 1992 (1992-02-25) cited in the application column 7, line 48 -column 8, line 44 column 9, line 50 -column 10, line 19 column 11, line 14 -column 12, line 61 column 16, line 60 -column 17, line 48; claims; examples 5,6; tables 2,3 ----	1,3-6, 8-14
X	US 5 560 931 A (EICKHOFF W MARK ET AL) 1 October 1996 (1996-10-01) the whole document ----	1,3-6,8, 9,11,13, 14
X	US 4 801 455 A (LIST PAUL H ET AL) 31 January 1989 (1989-01-31) the whole document ----	1,3-6,8, 9,13,14
X	GB 1 527 638 A (BAYER AG) 4 October 1978 (1978-10-04) the whole document ----	1,3,4,6, 8,9,14
P,X	WO 00 40219 A (DEXCEL LTD ;DOMB ABRAHAM J (IL)) 13 July 2000 (2000-07-13) the whole document ----	2,3,8-14
P,X	US 6 057 289 A (MULYE NIRMAL) 2 May 2000 (2000-05-02) cited in the application the whole document ----	2-5,8-14
P,X	WO 99 49848 A (RTP PHARMA INC) 7 October 1999 (1999-10-07) the whole document ----	2-5,8-14
P,X	WO 00 10531 A (RTP PHARMA INC) 2 March 2000 (2000-03-02) the whole document ----	2-5,8,9, 13,14
P,X	WO 00 41682 A (LG CHEMICAL LIMITED ;KIM MYUNG JIN (KR); KIM SUN JIN (KR); KWON KY) 20 July 2000 (2000-07-20) cited in the application page 5, line 10 - line 21 page 6, line 1 - line 19 page 7, line 16 - line 31 page 8, line 10 -page 10, line 16 claims 1-3,5-7,11-15,17-20; example 20; table 2 -----	1,3-5, 8-14

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-15 relate to an extremely large number of possible compositions, non-aqueous media, surfactant systems and hydrophilic substances. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compositions, non-aqueous media, surfactant systems and hydrophilic substances claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compositions prepared in the examples, and to the non-aqueous media, surfactant systems and hydrophilic substances disclosed in the examples on pages 22-28, and to the general concepts of "non-aqueous media", "surfactant systems" and "hydrophilic substances".

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

information on patent family members

national Application No

PCT/US 00/25880

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9929300 A	17-06-1999	AU 1809499 A AU 1817499 A EP 1039893 A NO 20002991 A WO 9929316 A	28-06-1999 28-06-1999 04-10-2000 09-08-2000 17-06-1999
WO 9929316 A	17-06-1999	AU 1809499 A AU 1817499 A EP 1039893 A NO 20002991 A WO 9929300 A	28-06-1999 28-06-1999 04-10-2000 09-08-2000 17-06-1999
US 5827822 A	27-10-1998	AU 2219097 A AU 709548 B AU 6644196 A BG 62875 B BG 101443 A BR 9606603 A CA 2202887 A CN 1164828 A CZ 9701248 A DE 789561 T EP 0789561 A ES 2129381 T HU 9801052 A JP 3009742 B JP 10509462 T NO 971890 A PL 319898 A SI 9620014 A SK 53697 A WO 9707787 A WO 9735603 A	17-10-1997 02-09-1999 19-03-1997 31-10-2000 31-03-1998 30-09-1997 06-03-1997 12-11-1997 17-09-1997 10-06-1999 20-08-1997 16-06-1999 28-09-1998 14-02-2000 14-09-1998 24-04-1997 01-09-1997 30-04-1998 08-10-1997 06-03-1997 02-10-1997
US 5091187 A	25-02-1992	US 5091188 A AT 181234 T AU 7852891 A CA 2078990 A DE 69131349 D DE 69131349 T DK 533690 T EP 0533690 A ES 2134776 T GR 3030825 T IN 173056 A KR 159114 B MX 25532 A RU 2100030 C WO 9116068 A US RE35338 E US 5246707 A ZA 9103122 A	25-02-1992 15-07-1999 11-11-1991 27-10-1991 22-07-1999 18-11-1999 22-11-1999 31-03-1993 16-10-1999 30-11-1999 05-02-1994 01-12-1998 01-10-1993 27-12-1997 31-10-1991 24-09-1996 21-09-1993 29-04-1992
US 5560931 A	01-10-1996	AT 198148 T AU 4862796 A CA 2207304 A DE 69611287 D EP 0808154 A	15-01-2001 27-08-1996 15-08-1996 25-01-2001 26-11-1997

INTERNATIONAL SEARCH REPORT

Information on patent family members

national Application No

PCT/US 00/25880

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5560931 A		JP 10513200 T WO 9624332 A	15-12-1998 15-08-1996
US 4801455 A	31-01-1989	DE 3623376 A AT 61730 T AU 597688 B AU 7553687 A CA 1302257 A DE 3768734 D DK 359787 A EP 0256285 A ES 2039214 T FI 873044 A GR 3001710 T JP 63023811 A PT 85292 A, B ZA 8705044 A	21-01-1988 15-04-1991 07-06-1990 14-01-1988 02-06-1992 25-04-1991 12-01-1988 24-02-1988 16-09-1993 12-01-1988 23-11-1992 01-02-1988 01-08-1987 24-02-1988
GB 1527638 A	04-10-1978	DE 2557615 A AU 503449 B AU 2073676 A FR 2335204 A NL 7614155 A NZ 182909 A ZA 7607506 A	23-06-1977 06-09-1979 29-06-1978 15-07-1977 22-06-1977 20-09-1978 30-11-1977
WO 0040219 A	13-07-2000	AU 1796200 A	24-07-2000
US 6057289 A	02-05-2000	AU 4681200 A WO 0066140 A	17-11-2000 09-11-2000
WO 9949848 A	07-10-1999	AU 3377099 A EP 1067908 A SE 0003449 A	18-10-1999 17-01-2001 23-11-2000
WO 0010531 A	02-03-2000	AU 5570599 A	14-03-2000
WO 0041682 A	20-07-2000	AU 3080500 A BR 0004152 A EP 1071407 A	01-08-2000 21-11-2000 31-01-2001